Cardiovascular Disease Risk and Breast Cancer Outcomes: A Pilot Study

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Breast cancer and cardiovascular disease (CVD) are two important health problems in women. The American Cancer Society, the American Heart Association, and the American Diabetes Association joined forces in 2004 to promote health and reduce risk factors for cancer, CVD (including stroke), and diabetes—the three most common causes of death in the United States (Eyre, Kahn, & Robertson, 2004). Evidence suggests that these diseases share common risk factors. Interventions directed at primary prevention, including public awareness of healthy lifestyles, should reduce morbidity and mortality for all three diseases (Eyre et al., 2004).

Emerging data are suggestive that breast cancer and CVD share more risk factors than previously believed. For example, diabetes, a well-established risk factor for CVD, is associated with an increased risk of breast cancer and poor outcomes (Coughlin, Calle, Teras, Petrelli, & Thun, 2004; Larsson, Mantzoros, & Wolk, 2007). In addition, inflammation, a long-known risk factor for CVD, has emerged as a risk factor for cancer (Colotta, Allavena, Sica, Garlanda, & Mantovani, 2009). Promotion of a healthy lifestyle to reduce what were once considered traditional CVD risk factors may actually prevent breast cancer or improve breast cancer survival. However, no comprehensive study has been conducted on shared multiple risk factors for these two diseases and a potential relationship with breast cancer outcomes. To fill the gap, the aim of this pilot study was to begin exploring multiple CVD risk factors and breast cancer outcomes in women who have been diagnosed with breast cancer.

The objectives of this study were (a) to assess the feasibility of using the health record for profiling prevalence of multiple CVD risk factors (increased age, dyslipidemia, high body mass index [BMI], diabetes, smoking, hypertension, family history of premature coronary artery disease, estrogen therapy, sedentary lifestyle, inflammation, and depression) in women at the time of the initial diagnosis and five years post-treatment, and relate these to breast cancer outcomes (tumor recurrence, stage progression, metastasis, and death) at five years post-treatment; and (b) to explore possible relationships among multiple CVD risk factors and breast cancer outcomes.